

# **Ziv Construction Solution**

## **Project Management System**

### **General**

Ziv Construction management solution of civil engineering projects deals with execution of estimates, evaluations, and follow-up and control activities performed in the course of the project.

#### **The system manages the following issues:**

- Definition of basic data, such as clause databases, indexes, currency rates, various tables, etc.
- Definition of projects and their division into sub-projects, consolidating bills of quantities and various project expenses.
- Definition of bills of quantities, including various work clauses, using existing clause databases, and price analyses.
- Execution of estimates, evaluations and calculations based on bills of quantities, including preparation of project's final bill of quantities.
- Management of tenders based on Bills of Quantities, including distribution of a CD to contractors for recording of unit prices and comparison of bids.
- Definition of contracts opposite contractors and various service providers.
- Follow-up on project progress, while reporting on various expenses, exceptional clauses, execution quantities and issuing of interim bills.
- Budget management and definition, and budgetary follow-up and control over the project using control reports according to various profiles.

- Management of cash flow based on budgets, contracts, and payments defined in the system, and according to defined start and end dates for the various subjects.
- Management of payment schedules, including definition of activities and relations between activities, updating network using the Pert method, calculation of critical paths, and production of gant diagrams according to various profiles.
- Management of suppliers, item databases, orders and delivery notes, including follow-up and control at the site level.
- Management of events/tasks and archives of documents and drawings at the project, sub-project and contract levels.

**Following is a general description of the various system modules:**

### **Basic Data**

The basic data module supports the management of basic data used by the system. There are some several types of basic data:

### **Item library**

The system enables the definition of various item libraries. Each library includes a list of chapters, sub-chapters and work clauses.

External libraries may be imported by means of magnetic media.

### **Price lists**

Each clause database may be ascribed one or more price lists according to update dates of the price list. External price list databases may be imported by means of magnetic media.

## **Indexes and Currency Rates**

The system handles various kinds of linkages, such as indexes on a monthly basis, currency rates on a daily basis, definition of baskets composed of a combination of several kinds of linkage.

Indexes or rates may be defined for each kind of linkage according to the appropriate date.

## **Database of Contractors and Designers**

The system supports the establishment and updating of a database of contractors and designers, which includes various information, and it enables the production of reports according to various profiles and classifications.

## **Various Tables**

Management of tables enables the classification of various information, according to defined codes, such as budget type, expense type, contractor type, etc, for the purpose of performing various cross-sections and sorting.

## **Project Definition**

This module deals with the definition of engineering projects. Each project is composed of different sub-projects, which constitute independent control units.

A Bill of Quantities may be defined for each sub-project, as well as a contract with the contractor/designer, and execution follow-up may be conducted by means of reports on expenses, execution quantities, and the issuing of interim and final bills.

## **Bills of Quantities**

The system enables the compilation of bills of quantities, either independently or based on existing clause databases. Bills of quantities may be imported to the system or may be transferred between different sub-projects.

The bill of quantities serves as a basis for the execution of evaluations and estimates, preparation of tenders, definition of contracts with contractors, and reporting on execution quantities.

### **Estimates and Price Analyses**

This module enables the definition of estimates and alternatives based on various Bills of Quantities, for the purpose of calculations and analysis of alternatives during the design stages of the project.

The system enables the definition of inputs for various clauses while loading expenses at different levels, such as the project level, company level, etc. Unit prices may be updated in the Bill of Quantities or in the tender according to the inputs determined, while maintaining an optimal price for each clause.

Comparison reports between estimates and alternatives may be produced at different levels of consolidation, and design and execution reports may be produced based on clause inputs.

### **Tenders and Contracts**

This module deals with the preparation of tenders and contracts, and supports the following activities:

- Definition of tenders and a preparation of list of participating contractors.
- Production of tender documents, including option for production of diskettes, and their distribution to contractors.
- Input of unit prices supplied by contractors, including option of import by means of magnetic media.
- Comparison of contractors' bids using various comparison criteria.
- Definition of contract with contractors or other service providers.
- Definition and follow-up on contractors' guarantees.

## **Interim partial Bills**

The system enables the issuing of preparatory reports for partial bills. Such reports are forwarded to the on-site execution contractors and constitute source documents for reports on quantities and progress of execution.

The preparatory reports contain the contract clauses, exceptional clauses, details pertaining to quantities accumulated from previous invoice, and columns for recording quantities requested by the contractor and approved by the supervisor. Execution data are input into the computer using a special screen and are used as a basis for the production of a partial bill. Upon issuing of the bill, a confirmation of payment is printed which constitutes confirmation of the actual execution of payment. Exceptional clauses are defined in the system with an option of classification as regular exceptions or final price exceptions.

In addition to reporting on quantities, the system handles various expenses that are not directly related to the Bill of Quantities, such as various management expenses, copying, etc. Reports may be issued which present detailed bills produced in the course of the project according to sub-projects and contractors. The above reports serve in the concentration of data for the interim partial bills.

## **Budget and Control**

The construction management system includes a budget management module, which is integrated into the system and enables the definition of various levels of budgets and the execution of budgetary follow-up and control, using reports produced according to various profiles. The system enables the definition of various budget types and clauses on several levels and attributes projects, sub-projects, contracts, and various expenses to the different budget types. An initial framework for the project budget may be constructed and utilization versus budget framework follow-up may be conducted.

**The system enables the production of control reports according to various profiles, such as:**

### **Quantity Control**

This report is produced at the clause level of the sub-project and it enables the presentation of contract clauses, contract quantities, adjusted quantities, execution quantities, and the calculation of budget value according to these quantities. In addition, percent execution of the clause is presented, by means of which the deviation of the required budget from the contract value may be seen.

### **Budgetary Control**

Nominal or adjusted budgetary control reports may be produced according to required indexes or currencies. Each report presents the project data according to various types of expenses and in a breakdown by base prices, modified prices (exceptions and modified control quantities), expense items and interim bills, budgetary balance and percent utilization. Control reports may be produced according to various profiles of sub-projects, and by budget type.

### **Cash Flow**

Cash flow reports may be produced according to project, type of expense and type of budget, based on the time framework (dates) defined in the system for each activity. Cash flow reports may also be produced according to the required type of linkage or currency.

### **Time Schedule**

This module deals with the Pert network methods, with the printout produced using a Gant diagram or an execution dates table, including a presentation of the planned time schedule versus actual execution times.

The system enables the definition of relations between different kinds of activities, in a breakdown by accountability and network consolidation.

## **Management of Suppliers, Orders and Delivery Notes**

The supplier module manages the following issues:

### **Basic Data**

- Definition of item databases, which include lists of items, classified by subject.
- Price list management.

### **Suppliers Database**

- Definition of general supplier information, including terms of payment.
- Possibility of linking suppliers to price lists.
- Definition of framework agreements with suppliers, enabling definition of framework budget for orders from the supplier and follow-up on actual utilization.

### **Orders from Suppliers**

This part of the system deals with ordering of items for the various sites. The system enables ordering items by their selection from a specific price list, or by individual entry of items into an order. The order form for the supplier is printed in several configurations as selected by the user.

### **Delivery Notes/Invoices**

Details of delivery notes/invoices are input into the computer. Order information is automatically displayed on the screen with the option of the display of updated actual quantities. Each delivery note/invoice forms a supplier payment movement. Actual payments are input into the system enabling follow-up and control.

## **Follow-up and Control Reports**

The system enables the production of various reports, such as ordered items report, consolidation of delivery notes, orders control, materials concentration by site, supplier payment follow-up, etc.